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Improve Cow Herd Efficiency

Lee Leachman

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And the skies are not cloudy all day….

MAYBE YOU SHOULD ONLY SELECT FOR COW HERD FEED EFFICIENCY?

- RFI – residual feed intake: do they eat more or less than other cattle weighing and gaining the same. Use to reduce maintenance energy.
- RADG – residual average daily gain: do they gain more or less than other cattle eating the same amount. Use to find the cattle that gain more.
- Feed to Gain – conversion in the feedlot: how many pounds of dry matter / pound of gain. Use to find the ones with the lowest cost of gain in the feedlot.
- Feed Intake – how much do they eat per day. Use to find the ones that cost less per day.
- Are any of these traits what you want?
- No, don't single trait select for efficiency, or any other single trait.
- I want PROFIT – specifically: **PROFIT per ACRE**.

WHAT IS COW HERD PROFIT PER ACRE?

- Profit / Acre = (Total Revenue – Total Cost) / Total Acreage
- How do you improve it?
  - Improving your stocking rate.
  - Make revenue go up.
  - Make cost go down.
- By definition, you must know how a change affects both Revenue and Cost.
- Strategies that don't work:
  - Select for excessive growth and milk.
  - Chase only post-weaning & carcass traits.
- Strategies that work:
  - Improve grazing management.
  - Crossbreed to improve herd fertility.
  - Select bulls using a multiple trait index that measures all of the economically relevant traits.

Effects of heterosis were greatest for

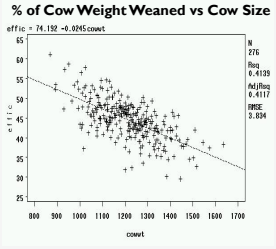
- Lifetime production (30%)
- Longevity or herd-life (15%)
- Annual income (23%)

LONGEVITY AND LIFETIME PRODUCTION TO 12 YRS OF AGE OF CROSSBRED AND STRAIGHTBRED COWS AMONG ANGUS, HEREFORD AND SHORTHORN
(Nunez et al. and Cundiff et al.)

	Crossbred Cows	Straightbred Cows	Heterosis Units	Heterosis pct
Longevity (herd life, years)	9.7	8.4	1.3	15
Breeding seasons, no.	8.2	7.1	1.2	16
Pregnancies, no.	7.7	6	1.7	20
Calves born, no.	6.6	6	.6	10
Calves weaned, no.	6.2	5.2	1.0	20
Cumulative 200 d wt weaned, lb.	2,798	2,156	642	30
Annual income (100 cow herd)	$16,524	$13,468	$3,056	23

WHAT ABOUT OPTIMAL COW SIZE?

% of Cow Weight Weaned vs Cow Size

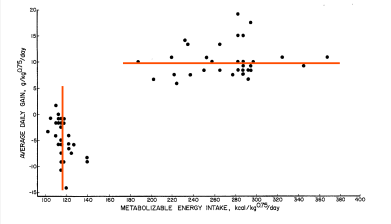


- Data from commercial herds in Arkansas, 2008, by Dr. Shane Gadberry.
- As cow size increased, the % of cow weight weaned (calf weight / cow weight) went down.
- For every 100 pounds of cow size, you lose 2.5% of cow weight weaned.
- Smaller cows wean smaller calves, but they wean a higher percentage of their body weight.

PROFIT DRIVER: FEED INTAKE
A TALE OF TWO BULLS…

- Same herd. 1244 AYW vs. 1222 AYW.
- 17 vs. 42 lbs. of dry matter / day (9,125 lbs. / year).
- Converted 4 to 1 vs 10 to 1.
- 40% Heritable = 112 cows vs 75 cows on same grass.
- Which bull's daughters do you want?

COW VARIATION IN ENERGY NEEDS
US MARC DATA



WHAT IS THE ADVANTAGE OF A SMALLER, FEED EFFICIENT, CROSSBRED COW?

Factor	Typical	Optimal	Comments
Total Dry Matter	1,000,000	1,000,000	Lbs. of total dry matter
Cow Weight	1400	1300	Reduced cow weight
Intake as a % of Cow Met Wt	11.0%	9.9%	Reduced DM Intake
Daily DM Intake	25.2	21.4	Cumulative effect DM/day
# Cows Supported	109	128	More cows/acre
% Cow wt weaned	40%	42.5%	Smaller cows = higher %
Weaning weight	560	553	Still less ww per calf
% weaned / exp	80%	85%	Effect of hybrid vigor
Lbs weaned / exp	448	470	Hybrids trump cow size
Total Pounds	48,752	60,030	

The herd with a greater number of smaller, lower intake, hybrid cows weans significantly more total pounds on the same feed resource!

WHAT IS THE ADVANTAGE OF A SMALLER, FEED EFFICIENT, CROSSBRED COW?

Factor	Typical Straightbred Large, Avg Intake	Optimal Crossbred / Small, Low Intake	Comments
Total Pounds	48,752	60,030	More smaller hybrid cows win
Total Revenue	$97,505	$120,059	Assuming $2 / lb.
Costs			
Feed Cost	$43,529	$43,529	Same feed costs ($500 / cow).
Variable Cost	$16,323	$19,174	$150 / cow variable costs.
Inventory Cost	$18,137	$19,367	$1000 replacement / 6 or 6.6 yrs.
Total Cost	$77,989	$82,070	
Profit	$19,515	$37,989	
Profit / cow	$179	$297	
Profit / acre	$9.76	$18.99	

Almost Double the Profitability.

That's what I call cow efficiency!

BUT WHAT DO LOW INTAKE CATTLE LOOK LIKE?

Visionary – Angus

Prophet – Stabilizer

ROD COOK, CRAIG, CO

"My cows weigh 1200 pounds and wean over 600 lb. calves. I feed 15 pounds of dry matter over the winter and the cows gain weight. The steers convert 5.1 to 1 and finish at 1425 pounds…."

Cook has used exclusively Leachman bulls for 20 years….